



SECTOR 9

AUSTRALIA—TORRES STRAIT AND GREAT NORTH EAST CHANNEL

Plan.—This sector describes Great North East Channel from NE to SW. The various channels leading through Torres Strait are then described from S to N. This is followed by a description of the islands and dangers in the N part of Torres Strait and by a description of the dangers in the W approach to Torres Strait.

General Remarks

9.1 Torres Strait lies between the N coast of the Cape York Peninsula and the S coast of Papua New Guinea; it connects the Coral Sea with the Arafura Sea. The E limit of the strait is approximately a line joining Cape York and Dauan Island, about 75 miles N. Dauan Island lies about 5 miles off the coast of Papua New Guinea. The W limit of the strait may be considered to lie between a point on the coast of Australia, about 30 miles SW of Cape York, and the mouth of the Bensbach River (9°07'S., 141°02'E.), about 127 miles NNW. The coast and dangers between the Bensbach River and Dauan Island are described in Pub. 164, Sailing Directions (Enroute) New Guinea.

The best and most commonly-used route through Torres Strait is through Prince of Wales Channel.

To the N of Jervis Island, 49 miles NNW of Cape York, Torres Strait is shallow and reef-strewn. There is no known route through this area for other than small craft with local knowledge.

Great Northeast Channel extends about 100 miles SW from **Bramble Cay** (9°09'S., 143°53'E.), its NE entrance, to **Harvey Rocks** (10°19'S., 142°41'E.). This channel connects the Gulf of Papua and the Coral Sea with the various channels leading through Torres Strait and is comparatively free of dangers.

Winds—Weather

9.2 In the E approach to Torres Strait, the Southeast Trades begin in April, with squalls and rainy weather at first, but in a week or 10 days the weather becomes more settled. These trades are strongest from May until August, with steady winds from the SSE to ESE. The wind is generally fresh and steady when the moon quarters and unsettled at the time of full and change. These trades continue until the first or second week in November, when the wind becomes more regular, stronger, and from the E, after which there are variable winds and calms until the latter part of November, and sometimes the beginning of December.

In Torres Strait, the Southeast Trades have been observed to generally be lighter at night than by day. These trades have been observed to be stronger with a high barometer than on other occasions, being then accompanied by a thick haze. Little rain is experienced, and the sky is rarely overcast during this period.

The Northwest Monsoon, which commences in December, may be expected to have strength and some regularity toward

the end of that month. During the months of January and February, the winds are strongest, but decline in strength toward the end of February until the beginning of March, when they become variable with cloudy and unsettled weather. The Northwest Monsoon season is the rainy season; violent thunder and lightning storms sometimes occur.

Apart from brief squalls, gales do not occur on an average of more than 1 day a year in this area and are generally associated with tropical storms.

On the S coast of New Guinea, both land and sea breezes are often the only winds during the transitional periods between the season of the Southeast Trades and that of the Northwest Monsoon.

Tides—Currents

9.3 The restricted channels of Torres Strait connect two areas in which the tides differ greatly. Marked contrast occurs between the semidiurnal components of the tide in either entrance. During some phases of the moon, it is HW in one entrance at the same time that it is LW in the other entrance. In consequence, great differences in the levels of the two entrances occur, and the tidal currents through the channels flow from the high level to the low level.

The tides at either end of the strait do not differ greatly in their diurnal component, therefore there are no marked differences in the water levels at either entrance, and high water due to this component is more or less uniform.

The tidal rise at **Booby Island** (10°36'S., 141°55'E.), just S of Gannet Passage, is as follows: HWS 4m; HWN 3m; LWN 2.1m; LLWS -0.2m. The HHW and the LLW only occur during certain times of the year so that for the most part, the tides range between 0.9 and 3.4m above datum.

High water springs at Twin Island is 2.7m; LWS is 0.4m.

An automatic telemetric tide gauge has been established at Booby Island. Automatic tide gauges broadcast on VHF channel 68. Tidal heights are also available from a telephone answering service (07) 4069-2821.

The tidal currents, in contrast with the tides, which have a relatively large diurnal component, are predominantly semidiurnal. East of and in the channels in the S part of Torres Strait, the tidal currents are mainly semidiurnal, but with appreciable diurnal inequality; diurnal inequality increases from E to W. West of the channels, diurnal inequality continues to increase, and at **Proudfoot Shoal** (10°32'S., 141°28'E.) the tidal currents are mainly diurnal and rotary.

The tidal currents in the channels through the S part of Torres Strait do not depend on, and cannot be referred to, the local tide. They may, however, be referred very approximately to the tide at Brisbane Bar. As a rule, the tidal currents set E while the tide is rising at Brisbane Bar, and W while the tide is falling.

The tidal currents turn almost simultaneously in all the channels and in the vicinity E of the channels. West of the channels,

the times become progressively earlier; near Proudfoot Shoal tides are about 4 hours earlier.

The direction of the tidal currents in the channels conform to the direction of the channels. Thus, the tidal currents which flow E and W in Prince of Wales Channel and in the W entrance of Endeavour Strait, flow N and S, respectively, in the E entrance of Endeavour Strait between Entrance Island and Woody Island.

The rates of the tidal currents are greatest in the most restricted channels and in the narrowest part of these channels. The rates predicted for Prince of Wales Channel can be regarded as about the greatest likely to be experienced in any channel normally used for navigation. The rates vary greatly with astronomical conditions.

Diurnal inequality is great. The weak E tidal current runs while the tide at Brisbane Bar is rising to LHW, and the strong W current runs while the tide at Brisbane Bar is falling from LHW. The strong E current runs during the rise to HHW at Brisbane Bar, and the weak W current runs during the fall from HHW at Brisbane Bar.

When the moon is in high declination near springs, the strong E and W tidal currents may run at a considerable rate. When the moon is near the Equator at neaps, the rate is inappreciable.

The horizontal movement of the water in the channel of Torres Strait is the combined effect of the current and the tidal current. When both are strong and setting in the same direction, their combined rate may be great. Under such conditions, a resultant current of 8 knots has been reported in Normanby Sound. Under similar conditions, but with the current setting against the tidal current, there would be little or no horizontal movement of the water. When the tidal current is weak, but the current strong, movement may be in one direction continuously for several days. When the current is weak and the tidal current strong, regular alternating W and E horizontal movements of the water may be experienced.

The currents in the various channels of Torres Strait depend to a great extent on the direction and strength of the wind. During the period of the Southeast Trades, from March to November, the current sets continuously W. In January and February, during the period of the Northwest Monsoon, the set through the strait is E. December may be considered as a transition month, but E sets can usually be expected during the latter part of the month. During and after long continuous, high velocity winds in an almost constant direction, the rate of the current may be considerable.

The currents off the SE side of Papua are irregular and little is known about them, except that they are greatly influenced by the direction and force of the wind.

The currents found in Great North East Channel are described with that channel.

Pilotage

9.4 Pilotage is compulsory for vessels 70m in length or longer and for all laden oil tankers, chemical carriers, and LNG carriers when navigating through the Inner Route of the Great Barrier Reef between Cape York (latitude 10°41'S.) and Cairns Roads (latitude 16°40'S.), or when passing through Hydro-

grapher's Passage. For more information, see paragraph 7.2 under the heading "Navigation in the Great Barrier Reef."

Vessels with a maximum draft of 12.2m can obtain pilotage through Gannett Passage, Varzin Passage, and Prince of Wales Channel.

Vessels 100m in length or larger and all laden oil tankers, chemical carriers, and LNG carriers are advised to carry a pilot when navigating in Torres Strait and the Great North East Channel between **Booby Island** (10°36'S., 141°55'E.) and **Bramble Cay** (9°09'S., 143°53'E.).

Pilots are available from Australian Reef Pilots Limited (call sign Reef Pilots) and Torres Pilots (call sign Torres Pilots). Both companies maintain comprehensive websites.

Australian Reef Pilots

<http://www.reefpilots.com.au>

Torres Pilots

<http://www.torrespilots.com.au>

Southbound and Eastbound Vessels.—Vessels requiring pilotage should give 4 to 5 days notice advising the ETA at the pilot boarding place, maximum draft, and destination.

Confirmation or adjustment of the ETA should be sent 24 hours and 6 hours prior to arrival. Contact the respective pilot station 2 hours before arrival, as follows:

1. Torres Pilots—VHF channel 79.
2. Reef Pilots—VHF channel 20.

Northbound and Westbound Vessels.—If in an Australian port, advise pilots of pilotage requirements, giving as much notice as possible.

If coming from an overseas port, advise pilots 4 to 5 days in advance of pilotage requirements, stating ETA (name of boarding place), maximum draft, and destination. For more information, see paragraph 7.2 under the heading "Navigation in the Great Barrier Reef."

Hydrographer's Passage.—Requests for pilotage should be sent 4 to 5 days in advance stating ETA at Blossom Bank and a confirmation of suitability for land-on helicopter transfer. Vessels must confirm or amend the ETA to the pilotage association at Mackay 48 hours, 24 hours, and 6 hours before arrival at Blossom Bank.

Grafton Passage and Palm Passage.—Requests for pilotage should be sent 4 to 5 days in advance stating ETA at Euston or Pith Reefs and with a confirmation of suitability for land-on helicopter transfer at Pith Reef.

Great North East Channel.—Requests for pilotage should be sent 4 to 5 days in advance stating ETA and pilot boarding position, maximum draft, and destination. For more information, see paragraph 7.2 under the heading "Navigation in the Great Barrier Reef."

Note.—Boardings and landings are by launch with the exception of Hydrographer's Passage and Edward Island Palm Passage, where only a land-on helicopter can be utilized. Land-on helicopters are available at other boarding places by arrangement, depending on aircraft availability and suitability of the vessel to accept a land-on helicopter. Vessels requiring pilot boarding by helicopter should request this service when or-

dering a pilot. Winch-down operations will be introduced when suitable aircraft are available. As a guide, a clear space of 21m is the minimum required for land-on helicopter operations. Some helicopters, however, require larger areas.

The maximum draft of a vessel transiting the Inner Route and Torres Strait, taking advantage of the tidal rise, is 12.2m. The pilotage service requires that vessels maintain an under-keel clearance of 1m in Gannet Passage and Varzin Passage. In Prince of Wales Channel, vessels with a draft of 11.9m or less must maintain an underkeel clearance of 1m, while vessels over 11.9m in draft must maintain an underkeel clearance equal to 10 per cent of the vessel's draft at all times.

Vessels entering or leaving the Inner Route by way of Grafton Passage, Palm Passage, and Hydrographer's Passage are restricted only by any draft limitation at the Australian port of arrival or departure.

Vessels are requested to maintain an International Radio Watch, as well as a watch on VHF channel 16, while in any of the pilotage waters mentioned above.

Regulations.—A protective zone had been established in the Torres Strait to protect the traditional activities of the inhabitants. Fishing by vessels of all nationalities in the zone is regulated by Australia and Papua New Guinea in accordance with an agreement between them.

The Inner Route

9.5 The Inner Route is an intricate, well-surveyed channel inside the Great Barrier Reef that may be termed one of the great trade highways of the world. The channel extends from Gannet Passage in Torres Strait, E of Cape York via Adolphus Channel, and along the Queensland coast to Capricorn Channel. The Inner Route is also accessible from the Coral Sea via the several passes and openings through the Great Barrier Reef.

This channel, which is charted as a two-way route, has been established by local authority, and is not mandatory. It is meant to indicate the best routes for moderate draft vessels (up to 9m). Traffic is free to move in both directions along its length. Caution should be taken while navigating along the route, taking into account the nature of the waterway, and the fact that vessels constrained by draft may be met in certain areas. Vessels should also note that the International Regulations for Preventing Collisions at Sea, 1972 (72 COLREGS) apply equally to vessels sailing within or outside of the charted route.

In accordance with the International Convention for the Safety of Life at Sea, 1974 (SOLAS, 1974) all vessels should maintain a watch on VHF channel 16 while sailing along or near the route.

Pilotage for the fairway is available from the Queensland Coast and Torres Strait Pilotage Service (Torres Sydney) by prior arrangement. Detailed information on pilotage, physical features, navigational hazards, etc. can be had in the sector pertaining to that area, and on the appropriate chart.

Great North East Channel

9.6 Great North East Channel, which is deep and comparatively free of sunken dangers in the fairway, is the most widely-used channel in approaching Torres Strait from the E.

There are two entrances leading into Great North East Channel, namely, Bligh Entrance and an entrance N and W of Bramble Cay. Bligh Entrance is the better of the two and lies between Bramble Cay and Anchor Cay, 19 miles SE.

Tides—Currents.—A W set has been experienced in Great North East Channel from **Bramble Cay** (9°09'S., 143°53'E.) to **Coconut Island** (10°03'S., 143°04'E.), with a rate of about 3 knots. A similar set at the same rate has been experienced N of the **Three Sisters Islets** (10°12'S., 142°49'E.). It is reported that during the period of the Southeast Trades, an abnormal current sets NW across the channel at a rate of about 5 knots.

The tidal currents in Great North East Channel are governed by the direction, and their rate by the narrowness of the passages through which they set.

In the vicinity of Bramble Cay and in the S part of Bligh Entrance, the tidal currents set E and W. However, because of the proximity of the mouth of the Fly River, about 25 miles NW, the tidal currents in this area are strong and irregular, especially during the season of the Northwest Monsoon (rainy season) and at the change of seasons.

During the season of the Southeast Trades, the W tidal current is accelerated by the current and is reported to then set toward Bramble Cay. Because of this, several vessels have shipwrecked on Bramble Cay.

In the fairway of Great North East Channel, between **Stephens Islet** (9°30'S., 143°33'E.) and Dungeness Reef, about 40 miles SW, the tidal currents are diverted into NE and SW sets by the extensive Warrior Reefs which form the NW side of the channel. The SW tidal current runs about 2 hours after HW. In this part of the channel a rate of 1.5 to 2 knots is experienced at springs.

Between **Saddle Island** (10°10'S., 142°41'E.) and Mount Adolphus, about 28 miles S, the tidal currents attain a rate of 1.5 knots.

Bligh Entrance (9°15'S., 143°55'E.) lies between Anchor Cay, the N extremity of the Great Barrier Reef, and Bramble Cay. The entrance is clear of dangers and has depths of 35 to 66m, sand and shells, and 4 miles S of Bramble Cay there is yellow clay.

9.7 Dangers on the S side of Bligh Entrance.—**Anchor Cay** (9°22'S., 144°07'E.) lies on the NW side of a small reef which forms the N termination of the Great Barrier Reef. The N side of this reef forms the S side of the outer part of Bligh Entrance.

Vessels using this entrance should keep N of a line joining the below described dangers.

Laxton Reef (9°24'S., 143°49'E.) is a drying reef. Drying reefs lie about 2 miles NE and 6 miles NW of Laxton Reef, a dangerous rock lies about 3.5 miles NNE of Laxton Reef.

Darnley Island (9°35'S., 143°46'E.) lies 7.5 miles S of Brown Reef. The island rises to a height of 181m and, in clear weather, may be seen from a distance of 25 to 30 miles from seaward. A coral reef, approximately 0.5 mile in diameter, lies 3.2 miles W of Darnley Island.

Anchorage.—Anchorage may be taken in Treacherous Bay, on the N side of the island, in 26 to 27m, about 0.5 mile off-shore. The anchorage is protected from SE winds.

Nepean Islet, 19m high, lies near the center of a reef, 6 miles WNW of Darnley Island. A depth of 6.7m lies 3.7 miles NNE of the islet.

9.8 Dangers on the N side of Bligh Entrance.—Bramble Cay (9°09'S., 143°53'E.), 3m high, serves as a good mark for vessels making Bligh Entrance from the E. The cay is surrounded by a reef which partly dries. Black Rocks, 1m high, lie 3 miles SW of Bramble Cay Light; a racon transmits from the tower.

Anchorage.—Temporary anchorage, in 37m, may be taken in the lee of Bramble Cay.

A shoal, with a depth of 7.3m, was reported to lie in position 9°00'S, 145°10'E, 77 miles ENE of Bramble Cay.

The entrance to Great North East Channel, N and W of Bramble Cay, lies between Bramble Cay and Parama Island and Bristow Island off the coast of Papua New Guinea. It should be borne in mind that the coast of Papua is low and is not visible more than 10 miles offshore, except for the trees on the islands.

The entrance is nearly 14 miles wide NW and SE between Bramble Cay and the shoals off the coast of Papua. When using this entrance, keep as near Bramble Cay as convenient. This entrance connects with Bligh Entrance SW of Bramble Cay.

9.9 Great North East Channel—Stephens Islet to Coconut Island.—From a position 3.2 miles S of Bramble Cay, the track extends about 42 miles SW to Dalrymple Islet. From this position the fairway trends SSW for 30 miles to a position 1.2 miles WNW of Coconut Island. The extensive Warrior Reefs and Dungeness Reef form the NW side of the channel.

Tides—Currents.—A W set, with a rate of 3 knots, has been experienced in Great North East Channel between Bramble Cay and Coconut Island, and Bet Island, the N of the Three Sisters.

In approximately mid-channel between Stephens Islet and Dungeness Reef, Warrior Reefs divert the tidal currents into NE and SW. The latter current runs for approximately 2 hours after HW. In this part of the channel, a rate of 1.5 to 2 knots may be allowed for at springs.

Stephens Islet (9°30'S., 143°33'E.) lies on the S side of the recommended track, about 7 miles NW of Nepean Islet. The islet is 38m high and lies on the N side of a drying reef. A village and mission are situated on the NE side of the islet.

A conspicuous church, which can only be seen from N, stands on the N side of the inlet. In 1981, a depth of 6m, with a shoal area extending 0.5 mile NE from it, was reported to lie 4.5 miles ENE of Stephens Islet.

Anchorage.—Anchorage may be obtained during SE winds off the NW side of the reef on which Stephens Islet lies.

Campbell Islet, 15m high, lies 4.5 miles SW of Stephens Islet, in the middle of a drying reef. A spit, with depths of less than 5.5m, extends 0.7 mile N from the reef. A depth of 15m was reported 4 miles E of Campbell Islet.

A sand cay, 1.2m high, lies on a drying reef on the N side of the channel, 14 miles NW of Stephens Islet. A similar cay and reef lie 1.5 miles farther NW.

9.10 Pearce Cay (9°31'S., 143°17'E.), 0.3m high, lies on the NW side of Great North East Channel, 15 miles W of Stephens Islet. The channel between the cay and Warrior Reefs is 3 miles wide.

Dalrymple Islet (9°37'S., 143°18'E.) lies on the W end of a drying reef, 5.5 miles S of Pearce Cay.

A 14.3m patch lies 2 miles WSW of Dalrymple Islet Light, on the W side of the recommended track.

Marsden Islet, 15m high, lies on the W side of a drying reef, 6.7 miles SSE of Dalrymple Islet. Keats Islet lies on a reef 4 miles ENE of Marsden Islet.

The Yorke Islands, 4 miles S of Keats Islet, is comprised of two islands. Massig Island, the largest of the two, lies on the W end of a reef; Kodall Island lies on the NE end of the reef, 1.2 miles E of Massig.

A village, with a flagstaff, lies on the N side of Massig; a radio mast, 100m high, stands near the center; and an airfield is situated at the W end of the island. A shoal, with a depth of 1m, was reported to extend 2 miles NE from a position 1 mile NE of the NW extremity of Massig Island.

Smith Cay, 0.3m high, lies on a small drying reef, 4.5 miles WSW of Massig Island.

Rennel Island (9°46'S., 143°16'E.), 22m high, lies on a drying reef 6 miles SW of Marsden Islet.

9.11 Warrior Reefs (9°14'S., 143°12'E.) lie with their N extremity about 26 miles NW of Stephens Islet. Warrior Reefs are formed by three large reefs that extend 38 miles SSW from their N extremity and form the NW side of this part of Great North East Channel. During the Southeast Trades, the E side of the reefs break heavily. The area N and NW of the reefs to the Papua coast is unsurveyed.

Tudu Island (9°48'S., 142°58'E.) lies close off the SW extremity of Warrior Reefs. It is located near the center of a reef which is 3 miles long in a NNW and SSE direction.

Dungeness Reef, which dries in places, lies with its N edge 3.2 miles S of Tudu Island, and extends 8.5 miles S. The SE side of the reef is generally well-defined.

Basilisk Passage, between the S end of Warrior Reefs and Dungeness Reef, is 1.5 miles wide. The passage is deep and clear of dangers, except for a reef which dries 2.7m, which lies in the fairway of the W entrance, 2.5 miles W of Tudu Island.

Tides—Currents.—The tidal E current through Basilisk Passage attains a rate of 5 knots at springs. The Southeast Trade winds against this current raise a confused sea. The NW current does not run so strongly.

Zagai Island, 3.2 miles SW of Tudu Island, forms part of the S side of Basilisk Passage.

Jacobus West Shoal (9°53'S., 143°04'E.) lies in the E entrance to Basilisk Passage, with a least depth of 2.8m lying about 3.4 miles ESE of the N extremity of Dungeness Reef. A 3.3m patch lies 1 mile WSW of Jacobus West Shoal.

Dove Islet (10°00'S., 143°02'E.) lies on the NW end of a drying reef, 6.5 miles SSW of Jacobus West Shoal. An area of bright green water, which should be avoided, lies 2 miles NE of the islet. A light stands on the E end of the reef extending from the islet. The recommended track passes about 1.2 miles E of the light.

Arden Islet (9°52'S., 143°10'E.) lies on the E side of the Great North East Channel, about 8 miles SW of Rennel Island. A depth of 14.3m is charted on the W side of the channel, 2.7 miles WNW of Arden Islet. A light is shown from the W extremity of Arden Islet.

A sand cay, which dries 1.5m, is located on the NW side of a small reef, 2.7 miles SE of Arden Islet.

Roberts Islet (9°59'S., 143°07'E.), 15m high and wooded, lies on the NW side of a drying reef, 7.2 miles SSW of Arden Islet. The recommended track passes about 2 miles NW of the islet.

Coconut Island (10°03'S., 143°04'E.) lies on the NW side of a reef, 4.2 miles SW of Roberts Islet. The reef extends 0.6 mile W of the island. The recommended track passes 0.8 mile W of the reef.

9.12 Coconut Island to East Strait Island.—From a position 1.2 miles NW of Coconut Island, the fairway of this part of the Great North East Channel trends in a general SW direction for about 12 miles to a position about 2 miles SSE of Bet Reef Light. The fairway then trends in a general WNW direction for 10 miles to a position about 3.2 miles SW of Bet Islet. From this position the channel trends in a SSW direction for about 10 miles to a position 2 miles SE of Harvey Rocks, then WSW 17.5 miles to East Strait Island.

An alternative preferred route, best seen on the chart, continues SW, beyond Vigilant Channel, for about 8 miles, then heads more WSW between **Ackers Shoal** (10°18.5'S., 142°48.8'E.) and **Kirkcaldie Reef** (10°20'S., 142°50'E.), which is marked with a racon. The route continues 22 miles towards East Strait Island.

Richardson Reef (10°07'S., 143°03'E.), with a sand cay 1.8m high on its NW side, lies 4.2 miles SSW of Coconut Island.

Walker Shoal has a depth of 5.2m. The shoal lies on the W side of the recommended track, 4 miles WSW of Coconut Island.

The water between Walker Shoal and the NE extremity of Bet Reef, 6 miles SSW has not been completely examined.

Bet Reef, 7 miles long from E to W, forms the N side of Vigilant Channel. A light, which is partially obscured by a stranded wreck between the bearings of 054° and 070°, is shown from the SE side of the reef. Bet Islet, 18m high, is located on the NW extremity of the reef.

Panther Shoal, with depths of 10.3 to 15m, extends 2 miles NW from the W end of Bet Reef.

Sue Islet (10°13'S., 142°49'E.), 26m high, lies near the NW extremity of a reef, 3.5 miles S of Bet Islet; the reef extends 2.5 miles ESE from Sue Islet. A shoal, with a depth of 3.6m, extends 0.6 mile NE from the E end of the above reef, and a shoal, with a least depth of 4.9m, extends 1.2 miles NW from the NW extremity of the reef.

Vigilant Channel is about 2.5 miles wide between the S side of Bet Reef and the N side of the reef surrounding Sue Islet. Depths of 10.9 to 20.1m are found in the fairway, which is clear of dangers. The recommended channel favors the Bet Reef side of the fairway.

Poll Islet (10°15'S., 142°50'E.), 14m high, lies on the E side of the recommended track, 2.7 miles S of Sue Islet.

Ackers Shoal, with a least depth of 0.7m, lies 3.7 miles SSW of Poll Islet. Depths of 2.2 and 5.2m lie 0.5 mile ENE and WSW, respectively, of the shoal.

9.13 Moresby Rock (10°11'S., 142°43'E.), small and steep-to, with a depth of 1.8m, lies on the W side of the recommended track, 6.7 miles WNW of Sue Islet.

Saddle Island, 48m high, is located 1.5 miles WNW of Moresby Rock; the island is fringed by a drying reef.

Between Saddle Island and the Mount Adolphus Islands, 28 miles SSW, the flood tidal current sets WSW, and the ebb ENE. Both attain a rate of 1.5 knots at springs.

Ninepin Rock (10°14'S., 142°41'E.), a steep-to rock, 6m high, lies 3.5 miles S of Saddle Island. The rock is square in shape and conspicuous.

Ibis Reefs, two reefs which dry 1.5 and 0.9m, lie 3.7 miles SSE and 3.5 miles S, respectively, of Ninepin Rock.

Harvey Rocks (10°19'S., 142°41'E.) is a group of black rocks, 6m high, which lie on a drying reef. A light is shown from the reef on which the rocks lie.

Beagle Rocks, two below-water patches, lie 1.2 miles W of Harvey Rocks.

Campbell Reef (10°20'S., 142°29'E.) is a below-water reef which lies 11.5 miles W of Harvey Rocks Light. A shoal, with a depth of 8.8m, lies 2.5 miles ENE of the shoal.

East Strait Island (10°30'S., 142°27'E.), 14m high, lies near the E end of a reef which extends 0.3 mile W from it. The island lies on the S side of the recommended track, 18 miles SW of Harvey Rocks.

The Twin Islands, 1.7 miles N of East Strait Island, consists of two islands which lie on the E and W ends of a reef which dries 2.1m in places. The E island is 61m high and is a prominent mark when approaching Prince of Wales Channel from the E.

Endeavour Strait

9.14 Endeavour Strait, the farthest S and most extensive of the W channels through Torres Strait, lies between Prince of Wales Island and the NW side of the Cape York Peninsula.

Endeavour Strait is entered from the E between Peak Point and the E extremity of Horn Island, 8.7 mile NW, and from the W between Cape Cornwall and a position on the mainland 9 miles S.

Vessels of light draft, with local knowledge, bound for the Gulf of Carpentaria, use Endeavour Strait in preference to Prince of Wales, as the saving in distance is about 12 miles.

Tides—Currents.—At Possession Island, the mean rise at springs is 2.7m. The flood current sets SSW for 7 hours; the ebb current sets NNE for 5 hours.

Tidal currents in Endeavour Strait commence and reach their maximum rates about 40 minutes later than off Hammond Rock, in Prince of Wales Channel, and except in the more restricted parts of the strait, their rates are not more than about 30 per cent of those N of Hammond Rock.

The tidal currents over Wallisp Bank and Inskip Bank are irregular, but in the W entrance of Endeavour Strait their main trend is E and W, the rising tide setting to the W and the falling tide to the E. At springs, the maximum velocity is 2 knots. At

neaps, and during the strength of the Southeast Trades, the tidal current is likely to run to the W all day.

9.15 East approach to Endeavour Strait.—Peak Point (10°43'S., 142°26'E.), the NW extremity of the Cape York Peninsula, lies 5.5 miles WSW of Cape York. The point is cliff-faced and rises to Carubaura, 149m high, 0.5 mile S.

A flat, with least charted depths of 0.3m, extends 1.7 miles offshore between Cape York and Peak Point. York Island, 84m high, lies on the E side of the flat, 0.2 mile N of Cape York.

Horn Island (10°37'S., 142°17'E.), 115m high, lies with its E extremity 8.7 miles NW of Peak Point. Horned Peak, 115m high, lies in the NE part of the island and is conspicuous.

Asp Shoals (10°38'S., 142°22'E.), which break, have a least depth of 1.2m. They extend 2.5 miles WSW from a position 3 miles ESE of the E extremity of Horn Island.

Prince of Wales Island (10°41'S., 142°11'E.) lies 1 mile SW of Horn Island. The island rises to a height of 232m in its W part. Rattlesnake Point is the SE extremity of the island, and Cape Cornwall, 6 miles WSW, is the S extremity.

The boat channel which separates Horn Island from Prince of Wales Island affords a good passage for small vessels between Endeavour Strait and Port Kennedy. There is a least depth of 0.9m in the fairway over the bar at the SE end of the channel. A rock, which dries 3.4m, lies on the bar across the SE entrance, 0.5 mile S of the S extremity of Horn Island.

9.16 Islands in the E entrance to Endeavour Strait.—Possession Island (10°44'S., 142°24'E.) lies on the E side of the strait, with its N extremity 2 miles W of Peak Point. It rises to a height of 76m near its S end, and is conspicuous because of the number of hummocks on it.

A spit, with depths of less than 1.2m, extends 0.7 mile ENE from Possession Island. A patch, with a least depth of 4.8m, lies in about mid-channel between Peak Point and the E extremity of Possession Island.

Dayman Island, 87m high, lies 0.7 mile SSW of Possession Island, and is reef-fringed. A spit, with depths less than 4.9m, extends 0.3 mile N from the island. A 4.2m patch was reported to lie 0.3 mile S of the S end of Dayman Island.

Meddler Island (10°42'S., 142°23'E.), a reef-fringed island 39m high, lies 0.8 mile WNW of Possession Island.

Shoals, with depths of 8.5m, lie 1 mile NE and 0.9 mile N, respectively, of Meddler Island. They are marked by overfalls. A depth of 10m was reported to lie 1.5 miles NNW of Meddler Island. A 4.6m patch was reported to lie 0.7 mile NNE of Meddler Island.

Quoin Island, 42m high, lies 0.7 mile SW of Meddler Island. A spit extends 0.4 mile NNE from the island.

The channel between the NW coast of Possession Island, and Meddler Island and Quoin Island, is 0.7 mile wide, with a least charted depth of 6.7m in the fairway. Tidal currents set through in the direction of the channel, and attain a rate of 5 knots at springs and 3.5 knots at neaps.

Great Woody Island (Kai-Yelubi Island) (10°42'S., 142°21'E.), 64m high, lies with its N extremity 1.5 miles WNW of Meddler Island. The island, which is 64m high, is fringed by a narrow drying reef. A drying reef extends 0.4 mile SSW from its S extremity. A shoal, with a depth of 3.6m, lies 1 mile W from the N extremity of the island.

Little Woody Island (Meggi-Yelubi Island), 47m high, lies close SW of Great Woody Island. An 8.5m shoal lies 0.4 mile NW of the island.

The channel between Great Woody Island and Little Woody Island is 1 mile wide, with a least depth of 10.7m in the fairway. Tidal currents set through the channel at a considerable rate.

Entrance Island (Zuna Island) (10°43'S., 142°18'E.) lies with its E extremity 2.2 miles W of Little Woody Island, and is separated from Prince of Wales Island by a channel 0.5 mile wide. There is a least depth of 10.4m in the channel.

Entrance Island is reef-fringed; the reef extends 0.8 mile SW from the island. An islet and two above-water rocks lie on the reef near its center.

An 8.2m shoal lies 0.5 mile NE, and a small patch, which dries 0.3m, lies 0.7 mile SW, respectively, of the N extremity of Entrance Island.

Chiropo Island, 10.7m high, lies near the N end of a drying reef, just over 1 mile NW of Entrance Island.

Gibson Rock (10°44'S., 142°18'E.) has a depth of 0.6m, and is marked by tide rips. An 6.9m patch lies 0.7 mile S of Gibson Rock.

Heroine Rock (10°46'S., 142°19'E.), a coral patch with a depth of 0.9m, lies 2 miles SSE of Gibson Rock and is marked by tide rips.

9.17 South side of Endeavour Strait.—From Peak Point the coast trends in a SSW direction about 14 miles, then W 8 miles to the W limits of Endeavour Strait. In general, the coast is low and sandy, with several streams flowing into the sea.

High Island (10°44'S., 142°25'E.), 79m high, is the largest and highest of several islands and islets that lie on the shore bank between Possession Island and the mainland.

Generally speaking, the entire area from High Island to Red Island, 7.5 miles SSW, is foul and should only be navigated by small craft with local knowledge.

Red Island (10°51'S., 142°21'E.) lies on the shore bank, 0.2 mile offshore.

There is a T-headed wharf, of concrete and wood construction, on the point close E of Red Island. The head of the wharf is 37m long and has a depth of 4.4m alongside.

Tidal currents have been reported to attain a rate of 6 knots in the channel between the point and Red Island.

Bacons situated on shore about 0.9 mile NE of Red Island lead from seaward to the wharf. When a vessel is about 0.5 mile from the front beacon, steer SSW to the wharf. Only vessels with local knowledge should approach this area.

Brady Bank lies with its S extremity 1.2 miles NNW of Red Island. A shoal patch with a depth of 4.6m, lies close off its S extremity.

Anchorage.—Anchorage, in 7 to 9m, may be obtained E of the S end of the bank.

Barn Island (Parau Island) (10°51'S., 142°19'E.), 43m high, lies 2 miles W of Red Island; the island is reef-fringed. A patch, with a depth of 4.9m, lies 0.8 mile NNE of Barn Island. A group of coral heads, with a least depth of 1m, lie almost 0.2 mile NE of the N extremity of Barn Island.

Mutee Head (10°55'S., 142°15'E.), 61m high, lies 8 miles SW of Red Island; it is a prominent headland.

The Jardine River flows into the strait 2.5 miles W of Mutee Head, and the W limit of Endeavour Strait lies about 1 mile farther W.

9.18 North side of Endeavour Strait.—The N side of Endeavour Strait is formed by the SE coast of Horn Island, Entrance Island, and the SE coast of Prince of Wales Island between Rattlesnake Point and **Cape Cornwall** (10°46'S., 142°11'E.), about 6 miles SW.

A bight on the SE coast of Prince of Wales Island is divided into two parts by a peninsula which lies 2.2 miles WSW of Rattlesnake Point. The bight is filled with drying mud flats and foul ground.

An islet lies on the NE end of a bank, with depths of less than 4.8m, 0.2 mile SSE of Rattlesnake Point.

Turtle Island, 23m high and reef-fringed, lies on the coastal bank 0.8 mile SW of Rattlesnake Point. A small islet, 0.9m high, lies on the E end of a spit, 0.4 mile S of Turtle Island.

Packe Island (10°45'S., 142°13'E.) is 81m high and is reef-fringed except on its E side, where there is a sandy beach. The island lies close W of the S extremity of the peninsula which divides the bight.

Port Lihou, the bight on the W side of the dividing peninsula, is mangrove fringed except for a distance of 1 mile NE of Cape Cornwall, where it is cliff-faced.

Dumaralug, an islet 15m high, lies on a bank 1.2 miles SSW of Packe Island. Below-water rocks and numerous shoal depths lie within the 10m curve in the vicinity of Dumaralug islet. The position of these dangers may best be seen on the chart.

Eagle Rock (10°47'S., 142°14'E.), 1.5 miles SE of Dumaralug Islet, is below-water. Peebles Shoals, with depths of 4.9m, lie 1.5 miles SW of Eagle Rock. An isolated reef, with a depth of 3m, lies 0.8 mile NE of Eagle Rock.

An 8.2m patch lies 2 miles SE of Eagle Rock, and there are other patches with depths of 10.4 to 11m in this vicinity.

9.19 West approach to Endeavour Strait.—The W approach to Endeavour Strait is encumbered by a bar, which has several long, narrow, and shallow ridges. Depths of 5.8 to 10.1m are found in the fairway, and a least depth of 7.3m is found on the approach line.

9.20 South Side of W entrance to Endeavour Strait.—Between the Jardine River and Slade Point, 13 miles SSW, the coast consists of low sand hills covered with scrub. Slade Point is the E entrance point to the Gulf of Carpentaria. For information regarding the Gulf of Carpentaria, see Pub. 175, Sailing Directions (Enroute) North, West, and South Coasts of Australia.

Crab Island (10°59'S., 142°06'E.) lies on a drying bank 1 mile W of Slade Point. The coastal bank, which dries in places, extends 4.7 miles SW from Crab Island.

9.21 North side of W entrance to Endeavour Strait.—The SW coast of Prince of Wales Island, from Cape Cornwall to Bampfield Head (10°43'S., 142°07'E.), consists of steep, rugged bluffs.

Yule Point (10°46'S., 142°09'E.), 1.7 miles W of Cape Cornwall, rises to a height of 119m, 0.7 mile N of its extremity. Bampfield Head lies 3.5 miles NNW of Yule Point.

Rothsay Banks, with depths of less than 5.5m, consists of extensive shoals and sandbanks which extend 14 miles W from Cape Cornwall. They form the N side of the W approach to Endeavour Strait.

9.22 Islands and dangers in the W approach to Endeavour Strait.—**Red Wallis Island** (10°51'S., 142°01'E.), 22m high, lies on a drying coral reef, 10 miles SW of Cape Cornwall. A 6.1m patch lies 1 mile NNE of the island.

Red Banks, consisting of narrow ridges of sand with depths of 0.5 to 6.7m, extend about 6 miles W from the W side of Red Wallis Island.

Woody Wallis Island (10°53'S., 142°02'E.), partially wooded and 13m high, lies on a drying coral reef about 2 miles SSE of Red Wallis Island.

Wallis Banks consists of several banks, with least depths of 0.4m, which extend 7.5 miles W from Woody Wallis Island.

Inskip Banks, consisting of extensive shallow sand ridges, which dry in places, occupy the entire area between Wallis Banks and the coastal bank fronting the mainland of Australia. A rocky islet, 1.8m high, lies on the N part of these banks in a position 1 mile SSE of Woody Wallis Island.

There is a channel, with a least depth of 7m, between the coastal bank extending from Slade Point and the SE side of Inskip Banks. Another channel between the N and S banks of Inskip Banks has a least depth of 5.8m. Extensive sandy shoals, which can best be seen on the chart, are located at the SW and W ends of the two channels. A 1.5m shoal lies 8 miles WSW of Woody Wallis Island.

9.23 Channels in the W approach to Endeavour Strait.—The main channel lies between the N side of Red Banks and the S side of Rothsay Banks. The general depths are 11 to 15.5m; however, in the W entrance, depths of 5.5 to 10.1m are found in the channel.

The channel between the S side of Red Banks and the N side of Wallis Banks should only be attempted by small vessels with local knowledge. A rock, which dries 2m, lies near mid-channel, 0.8 mile SSW of Red Wallis Island. There are several other patches in the channel which may best be seen on the chart.

Directions for Endeavour Strait.—Vessels approaching Endeavour Strait from the E should steer to a position about 1.2 miles N of Great Woody Island. When the summit of Great Woody Island bears 175°, steer course 220°, passing between Entrance Island and Gibson Rock.

When the N summit of Barn Island bears 093°, vessel should steer 273°, with the summit of the island astern, passing not less than 1.7 miles N of Red Wallis Island. When Red Wallis Island bears 111°, vessels should alter course to 291°. With the islet astern, continue this course for a distance of 10 miles from the islet, when the bar will have been cleared.

Vessels approaching Endeavour Strait from W may use the reverse of the directions.

Prince of Wales Channel and Approaches

9.24 Prince of Wales Channel affords the best passage through Torres Strait and is recommended for vessels passing through from either the E or W. The channel lies between

North West Reef and Sunk Reefs, on the N, and Wednesday Island, Hammond Island, and Goods Island, on the S.

Prince of Wales Channel may be approached from the NE, SE, or W. The approach from the NE, which is made via Great North East Channel, and the approach from the SE, which is made via the Inner Route and Adolphus Channel, can be safely navigated in daylight and under favorable tidal conditions. The area between Ince Point, the N extremity of Wednesday Island, and the SW end of Great North East Channel, may be considered as the critical part of the approach, as shoals of less than 9.1m exist close SE and NW of the recommended track. The approach from the W is via Gannet Passage, which can be dangerous under poor conditions of sea and tide, as the depths in the fairway are constantly changing and may be less than charted.

Tides—Currents.—Throughout Prince of Wales Channel and its approaches, from Twin Island on the E, to a few miles W of Goods Island on the W, the tidal currents flow at the times predicted for those of Hammond Rock Light. The rates diminish as the channel becomes less restricted. The rates in its E and W entrances are only about 30 per cent of those predicted in the channel N of the above light.

When Gannet Passage, N of Booby Island, is reached, the rates are comparatively weak and the character of the tidal current is quite different from that of Prince of Wales Channel. In the vicinity of Harvey Rocks and Saddle Island, the currents in the E approach to the channel reach their maximum rates about 30 minutes earlier than those of Hammond Rock, and in these more open waters, the rates are comparatively weak.

9.25 East approach to Prince of Wales Channel.—Twin Island (10°28'S., 142°27'E.), previously described in paragraph 9.11, is a prominent mark when approaching Prince of Wales Channel from the E.

Marina Rock (10°28'S., 142°23'E.), 3.7 miles W of the light on Twin Island, is a pinnacle rock with a depth of 2.1m.

Beresford Shoal, a narrow coral ledge, extends 3.2 miles W from a position 1 mile NNW of Marina Rock.

Edwards Rock (10°31'S., 142°26'E.), about 1 mile SSW of East Strait Island, has a least depth of 2.1m; the rock breaks occasionally. Reeves Shoal, with a least depth of 8.2m, lies 0.7 miles SSE of Edwards Rock.

Alert Rock (10°30'S., 142°21'E.) lies on a patch 5.5 miles WNW of East Strait Island; the rock has a depth of 5.5m. The patch extends 1.5 miles ENE, about 0.5 mile S, and 1.2 miles WNW, respectively, from Alert Rock. In 1986, it was reported that there was less water than charted 0.4 mile S of Alert Rock. A 10.7m patch lies 0.5 mile SW of Alert Rock and is marked by a buoy. A rock with a depth of 12.2m, lies 0.8 mile SW of Alert Rock. The dangers listed, including Marina Rock, are covered by a red sector of Tuesday Islet No. 4 Light.

Herald Patches, sand wave formations with depths of 7.6 to 11m, lie with their center about 1.5 miles E of Ince Point.

Caution.—Herald Patches and Alert Rock lie in sandwave formations which cause depths to vary from those charted. The sandwaves trend SE from Herald Patches and NE from Alert Rock. In addition, rocky outcrops occur in the channel between them.

A rock, with a depth of 10.4m, lies close S of the recommended track, 2 miles ENE of Ince Point.

Wednesday Island (10°31'S., 142°18'E.) forms part of the S side of Prince of Wales Channel. The island rises to a height of 91m in its S central part, and there is a height of 84m close S of Ince Point, the N extremity. A transmitting tide gauge has been established. Tide gauges transmit on VHF channel 68. Tidal heights are also available from a telephone answering service (07) 4069-2821. A light is shown from Ince Point.

Hood Bank extends 2.5 miles WSW from a position 0.3 mile W of Ince Point. It consists of hard sand pinnacles, which dry in patches, and lies parallel with and about 0.3 mile off the mud bank which fronts the NW coast of Wednesday Island.

9.26 North West Reef (10°30'S., 142°11'E.), which dries 1.2 to 1.8m, forms the major part of the N side of Prince of Wales Channel. It extends 9 miles WSW from a position 3.2 miles NW of Ince Point. A bank, with a least charted depth of 4m, extends 1.7 miles E from the E end of the reef. Overfalls occur between this bank and Ince Point.

Pilot Knoll, 1 mile SW of the E end of Northwest Reef, has a depth of 0.5m; the sea breaks over it in a moderate SE wind.

Duff Rock, with a depth of 1.8m, lies 1 mile WSW of Pilot Knoll.

Nardana Patches (10°30'S., 142°15'E.), close N of the recommended track, lies 0.7 mile SSE of Duff Rock. They are two rocks, with depths of 7.6m, marked by overfalls.

Pullar Patches (10°31'S., 142°15'E.) lies on the S side of the recommended track, 0.9 mile SSW of Nardana Patches. There is a least charted depth of 6.7m.

Marie Rock, with depths of less than 2m, lies 0.5 mile SW of Pullar Patches; it is marked by overfalls.

Hammond Island (10°31'S., 142°12'E.) rises to a height of 152m, 1 mile SSE of Turtle Head, its N extremity. Turtle Head is cliff-faced and 28m high. A tide gauge is situated close NW of Turtle Head, and a radio mast, which is the telemeter link with Booby Island, stands on Turtle Head. Tidal heights for Turtle Head are broadcast on VHF channel 68 and also available from a telephone answering service (07) 4069-2821.

Race Rock, which dries 0.6m, lies 0.2 mile ENE of Turtle Head.

Hammond Rock (10°31'S., 142°13'E.), 9m high, lies on the S side of the recommended track and about 0.3 mile N of Turtle Head. A light is shown from the rock.

Caution.—Turtle Head appears as an island from a distance of 10 miles, and should not be mistaken for Hammond Rock.

Round Island, 60m high, lies on the coastal reef, 1.5 miles SW of Turtle Head.

9.27 Goods Island (10°34'S., 142°09'E.) lies 0.6 mile W of Hammond Island. Tessy Head, the NE extremity of the island, rises to Hester Hill, 67m high, close SE. The NW side of Goods Island is fringed by a steep-to coral reef. A transmitting tide gauge has been established on Goods Island. Tide gauges transmit on VHF channel 68. Tidal heights are also available from a telephone answering service (07) 4069-2821.

Ipili Reef, with some boulders on it, lies 0.5 mile N of Tessy Head, and Mecca Reef, which dries 0.6m, lies 0.2 mile farther N on a bank with less than 10m over it. The recommended track lies about 0.2 mile NW of the bank.

Sunk Reefs (10°32'S., 142°08'E.), with depths of less than 10m, extend 3 miles W from a position 2.2 miles ESE of the W

end of North West Reef. There are several small drying reefs located on Sunk Reefs.

Harrison Rock, with a depth of 3.9m, lies 2 miles S of the W end of North West Reef. The rock is marked on its E side by overfalls.



Booby Island and Booby Island Light

9.28 West approach to Prince to Wales Channel.—Booby Island (10°36'S., 141°55'E.), 19m high, lies on the S side of the W approach to Prince of Wales Channel, about 14 miles WSW of the W extremity of Goods Island. A light is shown from the summit of the island.

Banda Rock, with a depth of 1.8m, lies 0.6 mile ENE of Booby Island.

A bank, with depths of less than 11m, extends 4.5 miles SW from Booby Island, with a 9.7m patch near its outer end.

Gannet Passage, 1.7 miles NW of Booby Island, leads across a ridge, with general depths of 9.4m, which connects with the bank on which Banda Rock lies.

Caution.—Owing to the unstable bottom in Gannet Passage, caused by moving sandwaves, the recommended track is amended from time to time to meet the variations in depths to those charted. A least depth of 9.8m was obtained in 2002. The lighted buoys are moved as necessary to meet the changes in the recommended track.

Varzin Shoal (10°33'S., 141°55'E.), 3.5 miles N of Booby Island, has a least depth of 2.7m, rock. It lies on the bank on the N side of Gannet Passage.

Varzin Passage lies 4.2 miles N of Booby Island and N of Varzin Shoal, and is marked by buoys. This passage, established in 1989, is the preferred W approach to Torres Strait.

Larpet Bank (10°35'S., 142°01'E.), with a least charted depth of 0.6m, hard sand, extends 4.7 miles E from a position 4.2 miles E of Booby Island.

Gerard Bank extends ENE 7.5 miles to Friday Island, from a position 7.2 miles ESE of Booby Island. The bank dries for a distance of 4 miles W of Friday Island.

9.29 Off-lying dangers in the W approach.—Carpentaria Shoal (10°45'S., 141°03'E.), with a depth of 12.8m, lies about 51 miles WSW of Booby Island and is marked by a lighted buoy.

Merkara Shoal, with a least charted depth of 6.4m, lies 16.5 miles NNE of Carpentaria Shoal.

Glamis Castle Shoal, with a depth of 10.1m, was reported to lie 31 miles N of Carpentaria Shoal. Careful, but unsuccessful searches have been made for this shoal.

Turu Cay (9°49'S., 141°25'E.) is the farthest NE of these dangers. The cay, about 0.9m high, lies on the NW side of a reef.

Deedler Reef, which dries 0.9m, is located 21 miles NNW of Glamis Castle Shoal.

Cook Shoal (10°04'S., 141°22'E.), awash, lies 23 miles ENE of Glamis Castle Shoal.

Sketty Belle Shoal, below-water, was reported to lie 13 miles SSE of Cook Shoal.

Swan Shoal, with a depth of 3.3m, lies 4.7 miles SE of Sketty Belle Shoal.

Cook Reef, crescent-shaped and awash, is about 4 miles in extent. The reef lies 4.5 miles S of Swan Shoal. A shoal patch, with a least depth of 3m was reported to lie about 2 miles S of the S edge of Cook Reef.

9.30 Proudfoot Shoal (10°32'S., 141°28'E.), a coral reef with drying rocks, lies 26 miles WNW of Booby Island Light.

Hockings Patches, 8 miles SE of Proudfoot Shoal, has a least depth of 8.8m. A depth of 10m lies 5.2 miles S of them.

Several shoal patches, with depths of 10 to 11m, exist within a 2.5 mile radius centered 6.5 miles S of Hockings Patches. The farthest S of these shoal patches lies 2.7 miles N of the W approach to Torres Strait.

Bramble Patches (10°30'S., 141°35'E.), a shoal area with a least depth of 3.4m, lie 6.5 miles E of Proudfoot Shoals.

Anchorage.—Anchorage can be taken, in 12m, sand and shells, about 4.5 miles W of Goods Island.

Directions.—Vessels bound for Prince of Wales Channel from the E should follow the recommended track leading through Great North East Channel. Those coming from the Inner Route via Adolphus Channel should follow the charted recommended track. Vessels approaching Prince of Wales Channel from the W should proceed via Gannet Passage and then follow the charted recommended track.

Caution.—Navigators are warned that the color of water in Prince of Wales Channel varies during different tidal and weather conditions. During strong winds, with the tidal current setting W, much sand is carried in the waters of the channel. At this time, the channel appears streaky and shoal-encumbered. In good weather, with the current setting E through the channel, the water is generally clear and the shoal areas can be readily ascertained.

Normanby Sound

9.31 Normanby Sound, the W and main approach to Thursday Island Harbor, lies between Friday Island and the N end of Prince of Wales Island on the S, and Goods Island, Hammond Island, and Thursday Island on the N. It is entered between **Pott Point** (10°36'S., 142°09'E.), the W extremity of Friday Island, and Tucker Point, the W extremity of Goods Island, 1.7 miles N. From the W, the sound is easily distinguished by Goods Island Light. In 1983, there was a least depth of 5m in Normanby Sound.

Tides—Currents.—In Bertie Bay, the mean range of the tide is 3m at springs and is 1.8m at neaps. The times of HW and LW are irregular and the duration of the currents is influenced by the prevailing winds.

Tidal currents have been known to reach 8 knots.

9.32 Friday Island (10°36'S., 142°10'E.) is about 2.2 miles long and rises to a height of 112m, close to its SE extremity. The N side of the island is formed by sand beaches fronted by

drying sand banks, except near its middle where it is reef-fringed.

Black Rock, 23m high, lies on a bank 0.2 mile NW of the N extremity of Friday Island. The bank, with depths of less than 5.5m, extends 0.7 mile WSW from the rock. A 6.4m patch lies 0.3 mile NNW of Black Rock.

Kunai Island, 3m high, lies 0.2 mile E of Black Rock.

Ghibber Rock (10°35'S., 142°10'E.) lies in the fairway of Normanby Sound, 0.2 mile NNE of Black Rock. There is a clear passage on either side of Ghibber Rock, but the N passage is preferred. When the rock is covered there are strong tide rips which extend across the S passage to Black Rock.

Goods Island, on the N side of Normanby Sound, between Tucker Point and Quoin Point, is fronted by a drying reef.

A spit, with depths of less than 11m, hard sand and coral, extends 1 mile SW from the SW side of Goods Island.

Goods Island rises to a hill, 97m high, 0.3 mile NE of Quoin Point. From Quoin Point to Tessy Head, the SE coast of the island is formed by a sandy beach, fronted by a drying reef.

Anchorage.—Bertie Bay or Goods Island anchorage lies between the SE side of Goods Island and **Wai Weer Islet** (10°34'S., 142°10'E.), 0.8 mile SW. Peile Reef and Brewster Reef lie on the N side of the bay. The area N of these reefs, be-

tween Goods Island and the W end of Hammond Island, is foul with reefs and sunken dangers.

Cardale Patch, with a depth of 3.9m, lies 0.6 mile W of Wai Weer Islet, and may be passed on either side.

West Wai Weer Reef, which dries 0.3m, extends about 0.4 mile W from the reef which fringes Wai Weer Islet. A reef, which dries on its inner part, extends 0.4 mile ESE from Wai Weer.

Anchorage may be obtained in the Southeast Trades, 0.7 mile W of Black Rock, in the quarantine anchorage, in 10m, with the N extremity of Black Rock bearing 098°, and the beacons E of Quoin Point in range.

Anchorage may be taken in Bertie Bay, in a depth of 8.2m, by vessels with local knowledge.

9.33 Brisbane Rock (10°35'S., 142°12'E.), with a depth of 3.1m, lies 0.3 mile NNW of Heath Point, the NE extremity of Prince of Wales Island.

Devonshire Rock, with a depth of 5.8m, lies 0.1 mile NE of Heath Point.

Tidal currents between Heath Point and Vivien Point, the SW extremity of Thursday Island, attain rates of 6 to 7 knots, and at times, 9 knots. When the current is setting against a strong Southeast Trade, there are tide rips across the channel which are dangerous to boats.



Thursday Island Anchorage

Thursday Island Harbor (10°36'S., 142°13'E.) is formed between Horn Island, Prince of Wales Island, and Thursday Island. The N and S parts of the W coast of Horn Island, which forms the SE side of the harbor, are mangrove-fringed, with a sandy beach between, backed by scrub-covered land. Double Hill, 94m high, rises 0.7 mile inland of the beach.

Madge Reefs, which dry, consists of several reefs lying roughly parallel with the W side of Horn Island and extend up to 0.7 mile offshore. There are passages between the reefs, but none are navigable.

Normanby Sound Ledge, with a depth of 5m, lies 0.3 mile ESE of Vivien Point.

Hovell Rock (10°36'S., 142°13'E.), a narrow shoal with a least depth of 3.4m, extends 0.3 mile E from a position 0.6 mile ESE of Vivien Point.

Thursday Island (10°35'S., 142°13'E.), on the N side of the harbor, rises to Milman Hill, 104m high, 0.5 mile WSW of the E extremity of the island. A prominent radio tower stands on Milman Hill.

The E and W ends of Thursday Island are reef-fringed; between which is a sandy beach, fronted by a mud bank covered with kelp. The coastal bank, with less than 5.5m, extends up to 0.2 mile offshore.

Thursday Island Harbor (10°35'S., 142°13'E.)

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9.34 Thursday Island Harbor (Port Kennedy) is located between the S side of Thursday Island and the N side of Madge Reef. The harbor is practically landlocked.

The port is under the jurisdiction of the Department of Transport Queensland. The local representative is the harbor-master at Thursday Island Harbor.

Queensland Ports Corporation

http://www.pcq.com.au/html/02_ports.htm

Winds—Weather.—The prevailing winds are SE from February to November and NW from November to February.

Tides—Currents.—The spring rise of the tide is 3m and the neap rise is 0.6m. It has been reported that there is a great irregularity both at the time of HW and at the height of the tide.

The flood current on the S side of the harbor attains a rate of 2 to 4 knots, and the ebb off Madge Reefs attain a rate of 4 to 5 knots.

The currents set strongly over Hovell Rock.

Depths—Limitations.—There are three channels to the port. Normanby Sound has a depth of 6.3m; Flinders Passage has a depth of 3m; and the Boat Channel, available only to vessels of light draft, has a depth of 2.7m.

There are three piers in Port Kennedy. The Main Jetty, for general cargo, is the middle jetty, and has an L-shaped head 30m long, with dolphins off each end, and a depth of 3.1m alongside. A barge ramp is situated inshore of the head.

The Caltex Jetty, the farthest E, is 23m long at its head and has a depth of 3.0m alongside. This is a T-shaped pier and oil terminal. A tank farm is situated at the root of the jetty.



Thursday Island from SE

Engineers Jetty, situated W of the Main Jetty, is 28m long at its head and has a depth of 4.3m alongside. This berth is utilized primarily by passenger vessels.

Horn Island Jetty, across the harbor, has a berth 40m in length, with two dolphins situated just SW. The depth alongside is 4m. Passenger ferries dock here.

The maximum allowable draft at the port is 5.4m.

Aspect.—The Grand Hotel, with its name in white letters on the roof, is situated about 0.2 mile NNW of the main jetty, and the church about 0.3 mile WNW of the hotel, is conspicuous from the harbor. The hospital buildings on Vivien Point are conspicuous.

Pilotage.—Pilotage is compulsory for all foreign vessels 35m long and over and is available during daylight hours only. Pilots come from Cairns and must be requested at least 72 hours in advance. See paragraph 8.14 for further information. Pilots will contact the ship on VHF channel 16 about 45 minutes prior to boarding time. Pilots board, as follows:

1. From the E—South of Chapman Reef.
2. From the W—South of Tucker Point on Goods Island.
3. From the S—Abeam of Boat Channel Lighted Buoy.

Vessels should maintain a continuous listening watch on VHF channel 16 when transiting the area.

Regulations.—The port is a first port of entry. Customs officers board the vessel at the wharf.

An underkeel clearance of 1m in draft is required.

Signals.—A red pennant displayed at the Post Office flag-staff, at the meteorological station on Green Hill, or from Goods Island Light Station, indicates that a storm warning has been received. The radio station near Vivien Point transmits weather bulletins, navigational warnings, and storm warnings.

Anchorage.—The most convenient anchorage during the SE Trades is 0.1 mile N of the E end of Hovell Rock in sand and mud, over a little clay and granite.

Vessels of more than 6.7m draft should leave the harbor before LW near spring tides and anchor between Hovell Rock and Heath Point, in 8 to 9m.

Vessels are prohibited from anchoring within 0.3 mile E or W of the Main Jetty, or within 0.1 mile S of it.

Shallow draft vessels often swing in an opposite direction to deep-draft vessels, and those in one part of the harbor in an opposite direction to those in another.

Directions.—Vessels should approach Thursday Island Harbor from the W through Normanby Sound.

Channels North of Prince of Wales Channel

9.35 A number of islands and reefs, with channels between them lie between Prince of Wales Channel and Jervis Island, 32 miles N.

Dayman Channel, Simpson Channel, Yule Channel, Bramble Channel, and Napoleon Passage, which lie parallel to Prince of Wales Channel, are unsuitable for deep-draft vessels. Banks Channel (Moa Channel) and Bligh Channel are known to be shallow and intricate. A light-draft vessel wishing to attempt any of these channels from either direction, should first send boats to mark the below-water dangers in the entrances. Even with this precaution, a vigilant lookout from aloft must be kept, and in no case should the attempt be made except in good light.

There is no route for deep-draft vessels N of **Jervis Island** (9°57'S., 142°11'E.).

In all of the above channels, the tidal currents are strong and uncertain, and there are few marks for fixing a vessel's position.

During the period of the Northwest Monsoon, the water in these channels is frequently so discolored that it is almost impossible to detect the positions of the various reefs and shoals.

9.36 Dayman Channel (10°28'S., 142°12'E.) lies between North West Reef and South Torres Reef, and is 1 to 2 miles wide.

Patches, with depths of 2.7 to 5.5m, lie in the W entrance of the channel.

The tidal currents are strong and set in the general direction of the channel.

South Torres Reef, which dries 3m, is about 8 miles long and has a greatest width of about 0.8 mile. Depths of less than 5.5m extend a short distance W from the reef.

Simpson Channel lies between South Torres Reef and North Torres Reef. This channel should only be navigated by vessels with local knowledge.

North Torres Reef, which dries 3m, lies 1.2 miles N of South Torres, and foul ground extend 1.5 miles E from North Torres Reef. The S side of the reef is well defined and steep-to.

Caution.—**White Rocks** (10°28'S., 142°02'E.), 7.6m high, is a group of bare rocks which lies on a drying reef, 5.5 miles W of South Torres Reef.

Fantome Reef, with a depth of 4m, lies 6 miles W of White Rocks. Both Fantome Reef and White Rocks lie on the extensive bank which extends N from Gannet Passage.

9.37 Yule Channel lies between North Torres Reef and Hawkesbury Island. The W part of the channel is foul with reefs and sunken dangers. The channel has not been adequately surveyed, and except in a case of necessity, should not be attempted.

Hawkesbury Island (10°22'S., 142°08'E.) rises to a ridge of craggy peaks, 146m high, near the S end.

Hawkesbury Reefs extend 2 miles N and 8.5 miles E, respectively, from Hawkesbury Island.

Channel Islet, 27m high, lies on the N edge of the E part of Hawkesbury Reefs.

West Island (10°21'S., 142°03'E.) rises to a height of 85m in its E part. The island lies 3.2 miles W of the N end of Hawkesbury Island.

West Shoal extends 2.5 miles W from a position close W of West Island.

Several dangerous coral patches lie within 3 miles SW and 1.2 miles S of Hawkesbury Island, partly blocking the W entrance of Yule Channel.

Bramble Channel is bound on the S by the N side of the shoal enclosing **Stonehenge** (10°19'S., 142°06'E.) and Tuft Rock, and by the N edge of Hawkesbury Reef, and on the N by Long Reef and the bank on which the Duncan Islands lie, at the W end of Long Reef.

Long Reef dries and extends 12 miles W from its E extremity. A drying coral reef lies 2 miles SSE of the E extremity of Long Reef.

Travers Island, 34m high, lies on a drying reef, 5 miles SE of Long Reef.

The Duncan Islands, consisting of five rocky islands, together with numerous islets and rocks, extend 4.7 miles NW from **Spencer Island** (10°17'S., 142°06'E.). Spencer Island is moderately high and lies on the S edge of the bank on which the other Duncan Islands lie.

Spencer Rock, with a least depth of 1.8m, lies about 0.5 mile WSW of Spencer Island.

There are numerous dangers charted in the vicinity of the Duncan Islands and the W end of Long Reef.

9.38 Banks Channel (Moa Channel) lies between Long Reef and the Duncan Islands on the S, and the SW side of Banks Island and Mulgrave Island (Badu Island). South Bank extends 10 miles W from Mulgrave Island on the N side of Banks Channel.

The E part of Banks Channel is wide, well-defined, and with one exception, clear of dangers, but rocks, islets, and shoals render the W entrance intricate and dangerous.

The tidal currents in Banks Channel set through in the direction of the channel and sometimes attain a rate of 5 knots.

Banks Island is low on the W and hilly on the E side. **Mount Augustus** (10°09'S., 142°19'E.), 380m high, is located on the NE extremity of the island.

Mulgrave Island (Badu Island) rises to a height of 200m, 2.7 miles N of **Rugged Point** (10°11'S., 142°08'E.), its S extremity.

There are a number of islets and dangers charted 2 miles S and 4 miles SSE, respectively, from Rugged Point.

9.39 Bligh Channel.—Bligh Channel, known locally as Alligator Passage, lies between the islets and reefs off the N side of Mulgrave Island, and the bank that lies 2.7 miles W of the NW extremity of Mulgrave Island on the S side, and by **Jervis Reef** (Mabuiag Reef) (10°00'S., 142°08'E.) and the numerous shoals and coral reefs which extend S from that reef, on the N side. The navigable part of the channel is barely 0.2 mile wide at its W entrance.

As the tidal currents set through the channel at a great rate, Bligh Channel may not only be considered intricate, but dangerous for those without local knowledge.

The dangers in the E approach to Bligh Channel are best seen on the chart.

Napoleon Passage lies between Jarvis Reef on the S side, and Basilisk Bank (10°00'S., 142°18'E.), Passage Island, Jarvis Island, and the foul ground extending W from the latter island, on the N side.

Napoleon Passage is the N passage through the Torres Strait. The passage has a least width of 0.4 mile, but it has not been closely examined and numerous dangers lie in it. The tidal currents set strongly through it.

Napoleon Passage should be attempted only by vessels with local knowledge and then under the most favorable of conditions.

Jervis Island (Mabuiag Island) (9°57'S., 142°11'E.) rises to a height of 160m, 0.9 mile N of its S extremity. Shoal water extends about 13 miles W from Jarvis Island.

Orman Reef (9°54'S., 142°15'E.), which has been partially examined, forms the SE side of the area of unexamined coral reefs which lie in the N part of Torres Strait, between Jarvis Island and the coast of Papua.

From a position 2 miles N of the E extremity of Jarvis Island, the outer edge of Orman Reef has been traced as extending 4 miles SE, then about 18 miles NE. The reef then turns WNW for about 13 miles.

For the coast of Papua, see Pub. 164, Sailing Directions (Enroute) New Guinea.

